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#### ABSTRACT:

A drawer runner kit for resisting unintentional disconnection of a drawer from its opening, comprises a pair of runners (1) which fix to sides of the drawer or opening, and a stop member (2) which fixes in the opening or to the drawer for co-operation with one runner. The latter (1) has a gate (8) opening along the runner defined by lateral projections (3, 6) one of which presents a rearwardly-directed angular edge (7). The stop member (2) has a shank (13) of similar width of the gate (8) and profiled, preferably of star-shaped cross-section, to define an angular recess or recesses with which the angular edge (7) can engage to prevent the stop member passing forwards through the gate in normal use. The angled portion 4<1> of the runner 4 allows the drawer to be inclined, in which position the stop member shank (13) may pass through the gate (8) and the drawer withdrawn from the furniture. <IMAGE>

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(51) INT CL<sup>\*</sup>  
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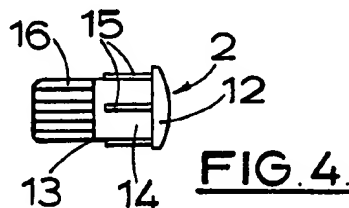
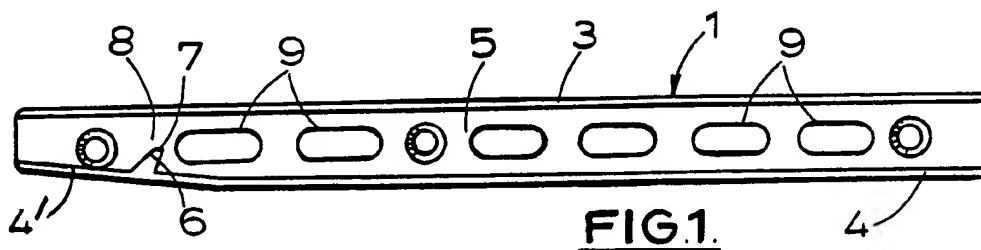
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(54) **Furniture drawer runners**

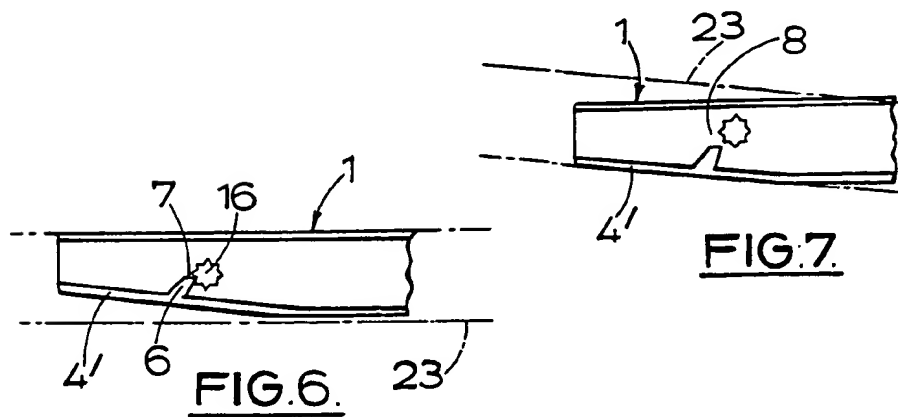
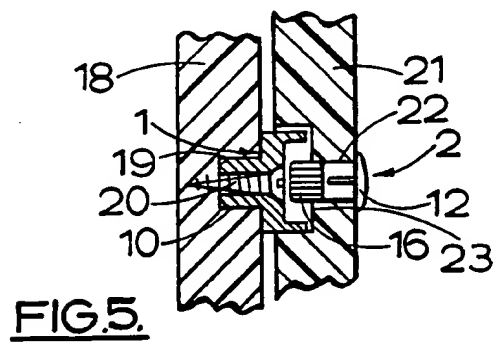
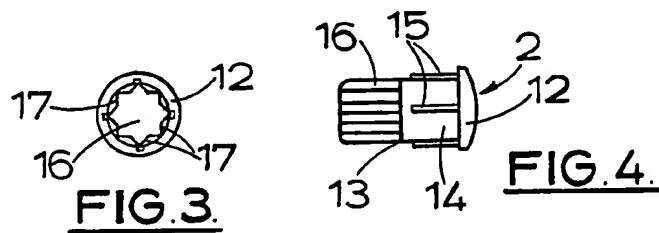
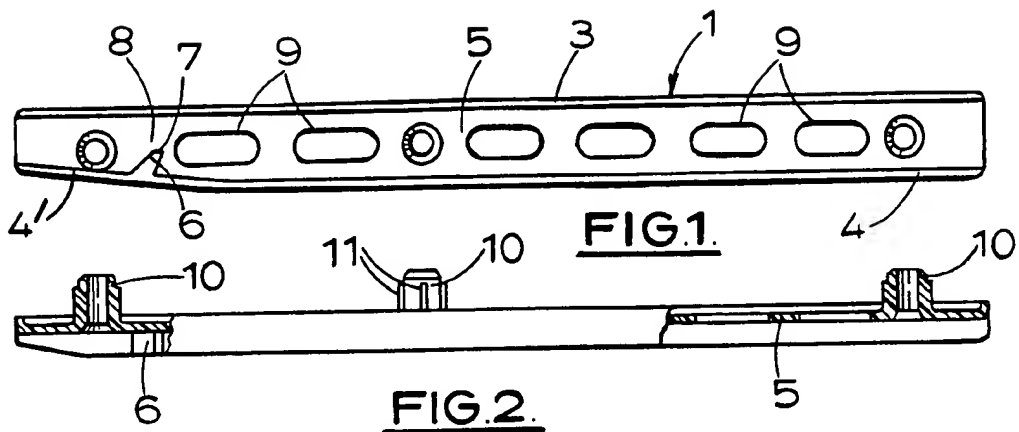
(57) A drawer runner kit for resisting unintentional disconnection of a drawer from its opening, comprises a pair of runners (1) which fix to sides of the drawer or opening, and a stop member (2) which fixes in the opening or to the drawer for co-operation with one runner. The latter (1) has a gate (8) opening along the runner defined by lateral projections (3, 6) one of which presents a rearwardly-directed angular edge (7). The stop member (2) has a shank (13) of similar width of the gate (8) and profiled, preferably of star-shaped cross-section, to define an angular recess or recesses with which the angular edge (7) can engage to prevent the stop member passing forwards through the gate in normal use. The angled portion 4' of the runner 4 allows the drawer to be inclined, in which position the stop member shank (13) may pass through the gate (8) and the drawer withdrawn from the furniture.



At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.  
 The claims were filed later than the filing date within the period prescribed by Rule 25(1) of the Patents Rules 1982.

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IMPROVEMENTS RELATING TO FURNITURE DRAWERS

This invention relates to furniture drawers and more particularly is concerned with drawer runners and means for resisting unintentional disconnection of drawers from their in-use locations.

It is desirable that drawers should be readily fitted into and, if required, removed from their locations for use, but unintentional disconnection from the locations should be resisted.

According to a first aspect of the present invention there is provided a drawer runner kit which comprises a pair of runners adapted to be mounted at opposite sides of a drawer, either on the drawer itself or in the opening in an article of furniture in which the drawer is to be located, and a stop member adapted to be mounted at one side of the drawer, either in the said opening or on the drawer itself as the case may be, for co-operation with one of the runners, said one runner having at or towards a forward end thereof lateral projections which define a gate opening longitudinally of the runner and one of which presents an angular edge at one side of the gate directed rearwardly of the runner, and the stop member having a shank of a cross-section dimensioned to be substantially complementary to the width of the gate so that the shank can pass transversely through the gate but being profiled to define one or more angular recesses at its periphery with which the angled edge can engage if, when the shank is behind the gate, the shank and gate are not presented in a particular disposition relative to one another, thereby to deter passage of the shank through the gate.

According to a second aspect of the invention an article of furniture is provided having a drawer slidably located in an opening by means of a pair of runners mounted at opposite sides of the drawer, either on the drawer itself or in the opening, one of which runners has at or towards a forward end lateral projections which define a gate opening longitudinally of the runner and one of which presents an angular edge at one side of the gate directed rearwardly of the runner, and there being mounted either in the opening or on the drawer, as the case may be, a step member which co-operates with the said one runner and has a shank of a cross-section dimensioned to be substantially complementary to the width of the gate so that the shank can pass transversely through the gate but being profiled to define one or more angular recesses at its periphery with which the angled edge can engage if the drawer is drawn out of the opening and the shank and gate are not presented in a particular disposition relative to one another, thereby to deter passage of the shank through the gate and resist disconnection of the drawer from the opening.

The angularity of the edge at the gate and of the recess or recesses of the shank has the effect of urging them into, and holding them in, interengagement when they are brought together, even with some impact.

The invention deters disconnection of the drawer by ordinary opening movement of the drawer. Special movement of the drawer relative to its opening is needed to enable the drawer to be disconnected by bringing the shank and gate into the particular disposition necessary to enable the shank to pass through the gate. Conveniently the particular disposition is achieved by tilting the drawer upwards

from its front end in its normal fully opened position of use.

5 Normally the runners will be mounted in the opening for the drawer and the stop member will be mounted on the side of the drawer for co-operation with the one runner.

10 The other runner may have a similarly defined gate and a further, similar, stop member may be provided for co-operation with that runner.

15 Preferably the runners and the stop member or members are made of plastics materials, as mouldings, but they may be made of metal. The runners and the stop member or members may be moulded together as a single moulding from which the individual components can be readily separated as and when they are required to be used. This is a convenient form in which to supply the kit because it can facilitate packaging for sale and transportation, and storage.

25 The runners may be of a channel-section disposed on its one side so that the opposed flanges of the channel project horizontally from the web portion when the runners are mounted in position for use. One flange, preferably the upper one, may then form one of the lateral projections by which the gate is defined, and the other lateral projection may be a protrusion on the inner side of the other flange extending towards the first flange. The protrusion may simply be a finger-like formation which is inclined towards the rear end of the runner and has a bevelled extremity which presents the angled edge. Preferably the edge is acutely angled to be relatively sharp.

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The or each stop member may be in the form of a pin or peg which is secured for use by driving its shank into a side wall of the opening for the drawer or of the drawer, as the case may be. At least a portion of the shank which projects for co-operation with the one, or respective, runner is profiled to define the angular recess or recesses. The shank is preferably of a star-shaped cross-section, thereby providing several angular recesses around the shank between the points of the star. The shank may be profiled in other ways, for example by notching, grooving, splining or ribbing, to provide a suitable angled recess or recesses. By having the shank of a star shape or other shapes in which recesses are presented all around its periphery, mounting of the stop member for use is facilitated because the shank does not then have to be specially orientated to ensure that recesses are in the required positions for effective co-operation with the angled edge at the gate.

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An embodiment of the invention will now be described by way of example only with reference to the accompanying drawings in which:

25        Figure 1 is a side view of a runner of a drawer runner kit in accordance with the invention;

Figure 2 is a plan view, partly in section, of the runner;

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Figures 3 and 4 are end and side views respectively of a stop member of the kit;

Figure 5 is a fragmentary sectioned view of the runner and stop member mounted for use, and

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Figures 6 and 7 are fragmentary side views showing the runner and stop members respectively in a normal working relationship and a releasing relationship.

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In this embodiment of the invention a drawer runner kit is provided which comprises two runners 1 and two stop members 2, only one of each of the runners and stop members being shown in the accompanying drawings. They are all made as plastics mouldings. The two runners 1 are mirror images of one another for mounting at opposite sides of a drawer opening in an article of furniture. The stop members 2 are identical to one another.

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Each runner 1, as shown in Figures 1 and 2, is of a substantially channel-section disposed on its side, having upper and lower opposed flanges 3 and 4 respectively and a web 5. The lower flange 4 has an upwardly-inclined portion 4' at the forward end of the runner. Except at that upwardly-inclined portion 4' the upper and lower flanges are parallel. Projecting upwards to the middle of the channel from an intermediate part of the length of the upwardly-inclined portion 4', and joined to the web 5, is a rearwardly-inclined, finger-like lug 6 which is bevelled off horizontally at its upper end so that it presents a rearwardly-directed, acute-angled edge 7. The upper end of the lug 6 and the immediately opposite part of the upper flange 3 define a gate 8 in the channel of the runner. The width of the gate 8, that is between the lug 6 and the upper flange 3, is narrower than the width of the channel at the forward end of the runner between the upper flange and the upper end of the upwardly-inclined portion 4' of the lower flange 4.

The web 4 of each runner has lightening slots 9 in it and is formed with bosses 10 for fixing screws at spaced positions along the runner which project perpendicularly from the outer face of the web. Small external splines 11 are formed on the bosses 10.

Each of the stop members 2, as shown in Figures 3 and 4, takes the form of a headed peg having a shallow domed head 12 and a shank 13. An inner portion 14 of the length of the shank is cylindrical with external splines 15 and an outer portion 16 of the shank is of star-shaped cross-section of the same external diameter as the inner cylindrical portion 14. In this embodiment the star-shaped cross-section has eight points with the flanks of the points converging at 90° so that wide obtuse-angled recesses 17 are defined between the points. The external diameter of the star-shaped cross-section is a little less than the width of the gate 8 of each runner; typically the gate is 7.5 mm wide and the external diameter is 6 mm.

For use the runners are mounted horizontally on opposite side walls 18, Figure 5, of a drawer opening in an article of furniture, their channels facing into the opening and their forward ends at the front of the drawer opening. Their bosses 10 are located in complementary sockets 19 drilled into the side walls 18 and fixing screws 20 engaged in the bosses are screwed into the side walls at the ends of the sockets to fix the runners in position. The stop members 2 are mounted on the opposite side walls 2 of the drawer to be fitted in the drawer opening, towards the back of the drawer. Their shanks 13 are driven from inside the drawer through holes 22 drilled in the side walls 21 of the drawer until their heads 12 abut against the side walls. The inner portions 14 of the shanks are then

contained, as a tight fit, within the thicknesses of the side walls and their splines 15 add further restraint to the stop members turning in the holes. The star-shaped outer portions 16 of the shanks protrude centrally into grooves 23 formed in the outer faces of the side walls, of slightly greater width than the runners with which the grooves co-operate, to locate the drawer slidably in the drawer opening.

When inserting the drawer in the opening it can be pushed either horizontally or initially slightly tilted into the opening. The rearward inclination of the lugs 6 enables the outer portions 16 of the shanks of the stop members 2 to ride over them and pass through the gates 8 into the main parts of the channels behind them. Once past the gates 8, however, the stop members centralise in the channels of the runners and so when the drawer is pulled out horizontally in the normal way their outer portions 15 will engage with the lugs, as shown in Figure 6, and stop the drawer from being completely withdrawn from the drawer opening. Co-operation between the acute-angled rear edges 7 of the lugs and registering angular recesses 16 of the star-shaped outer portions 16 prevents the shanks of the stop members from riding up over the lugs and through the gates, even if the drawer is pulled hard.

In order to remove the drawer from the opening it has to be drawn out until the stop members are near the lugs 6 and then lifted at the front to tilt it upwardly. This raises the stop members sufficiently, as shown in Figure 7, to enable them to pass over the rear edges 7 of the lugs and through the gates 8. The upwardly-inclined portions 4' of the lower flanges 4 permit the necessary movement of the drawer grooves 23 relative to the runners to allow the required amount of

tilting for the disconnection to be made. Typically  
tilting by about  $6^\circ$  is sufficient.

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CLAIMS

1. A drawer runner kit comprising a pair of runners adapted to be mounted at opposite sides of a drawer, either on the drawer itself or in an opening in an article of furniture in which the drawer is to be located, and a stop member adapted to be mounted at one side of the drawer, either in the said opening or on the drawer itself as the case may be, for co-operation with one of the runners, said one runner having at or towards a forward end thereof lateral projections which define a gate opening longitudinally of the runner and one of which presents an angular edge at one side of the gate directed rearwardly of the runner, and the stop member having a shank of a cross-section dimensioned to be substantially complementary to the width of the gate so that the shank can pass transversely through the gate but being profiled to define one or more angular recesses at its periphery with which the angular edge can engage if, when the shank is behind the gate, the shank and gate are not presented in a particular disposition relative to one another, thereby to deter passage of the shank through the gate.

2. A drawer runner kit according to claim 1 wherein the other runner has a similarly defined gate, and a further, similar, stop member is provided for co-operation with that runner.

3. A drawer runner kit according to claim 1 or claim 2 wherein the runners and the or each stop member are plastics mouldings.

4. A drawer runner kit according to claim 3 wherein the runners and the or each stop member are moulded

together as a single moulding from which the individual components are separable.

- 5        5. A drawer runner kit according to any preceding claim wherein each runner is of channel-section disposed on its one side so that the opposed flanges of the channel project horizontally from the web portion when the runner is mounted in position for use.
- 10       6. A drawer runner kit according to claim 5 wherein one flange of the one, or each, runner forms one of the lateral projections by which the or each gate is defined.
- 15       7. A drawer runner kit according to claim 6 wherein a second one of the lateral projections of the or each gate is formed by a protrusion on the inner side of said other flange of the or each runner extending towards said one flange.
- 20       8. A drawer runner kit according to claim 7 wherein the second lateral projection of the or each runner is a finger-like formation inclined towards the rear end of the runner and having a bevelled extremity which
- 25       presents the angular edge.
- 30       9. A drawer runner kit according to claim 7 or claim 8 wherein the second lateral projection of the or each runner is on a portion of said other flange which is inclined inwardly towards the forward end of the runner.
- 35       10. A drawer runner kit according to any of claims 6 to 9 wherein said one flange of the or each runner forming the one lateral projection is the upper one of the channel.